PR-7. MULTI-ANALYSIS: FROM SENSING TO PERCEPTION

F. Li [1, 2]

[1] College of Chemistry and Materials Science, Jinan University, Huangpu W. Av. 601, Guangzhou, 510632, China

[2] Institute of Chemistry, Chinese Academy of Sciences, 1st North St., 2, Beijing, 100190, China

E-mail: forrest@iccas.ac.cn

Inspired by human olfactory system, cross-reactive sensor array has emerged as a valid approach to multi-analyte recognition and has been widely used in food industry, environmental detection, biological screening, *etc*. A critical requirement for successful multi-analyte recognition is abundant sensing information acquisition. We investigated the correlative multi-states properties of a photochromic sensor, which is capable of a selective and cross-reactive sensor array for discriminated multi-analytes detection by just one sensing compound. We designed and fabricated multi-stopband PCs microchip which can selectively amplify the sensing fluorescence in different channels, and perform a high-efficient multi-analyte discriminant testing.

We developed printable curves sensor performed sensitive and stable resistance response on deformations, which could run complicated facial expression recognition, and contribute the remarkable application on skin micromotion manipulation auxiliary apparatuses for paraplegics. We firstly proposed the dynamic analysis for multi-detection, adopted photonic crystal nanomaterials in multi-analyte detection, and fabricated high-performance wearable multi-analysis sensor. Our innovative works achieved facile and efficient complete multi-analyte recognition with single and simple material using.